

Remarks

The Applicants have amended the Substitution Specification in paragraph [0024] to acknowledge that the source of voltage previously indicated as being “not shown” is now shown. The brief description of the drawings in paragraph [0009] has accordingly been amended. The Applicants enclose a new set of drawings that is in accordance with the changes to the Specification. Entry of the changes to the Specification and the replacement drawings in the official file is respectfully requested.

The Applicants have added a new Claim 36. That claim is similar to Claim 19 except that it omits the “means” language. Entry of new Claim 36 into the official file is respectfully requested.

The drawings stand objected to because of their poor quality. The Applicants have therefore submitted replacement drawings. As noted above, entry of those drawings into the official file is respectfully requested.

Claims 19-21, 24-32 and 35 stand rejected under 35 USC §103 over the hypothetical combination of Cory with Lum. The Applicants note with appreciation the Examiner’s detailed comments hypothetically applying the combination against those claims. The Applicants nonetheless respectfully submit that even if one skilled in the art were to make the hypothetical combination, the device resulting from such a combination would be completely different from the subject matter of Claims 19-21, 24-32 and 35. Detailed reasons are set forth below.

The rejection frankly acknowledges that Lum fails to disclose a source of voltage supplying the at least two electrodes. The Applicants agree. However, the Applicants respectfully submit that Lum fails to provide other disclosure that is relevant to Claims 19-21,

24-32 and 35. To place those differences into context, the Applicants begin with preliminary comments concerning the subject matter of Claims 19-21, 24-32 and 35.

The Applicants provide an exploration device that facilitates proper positioning of a penetration instrument by indicating the position of gaps formed during a drilling operation, the gap being detected by variations of impedance in the tissues between two electrodes. This is described in detail in paragraphs [0032], [0044], [0045] and [0055]-[0057] of the Applicants' published Application.

The exploration device includes means of angular location and means for detecting a position of an electrode. The means of angular location are formed by one electrode punctually coinciding with a peripheral surface of the penetration instrument and offset from a longitudinal axis of the penetration instrument. Therefore, the electrode of the means of angular location partially and discontinuously coincides with a peripheral surface of the penetration instrument and is not centered with respect to the longitudinal axis. In this regard, annular and tubular electrodes are explicitly excluded as a means of angular location as described in paragraph [0017] of the Applicants' published Application.

In sharp contrast, Lum discloses a device comprising means for sensing penetration depth of a needle in column 6, lines 54 to 58. Lum implements an electrode formed of an electrically conductive coating (122) having a conductive end (125) at the distal end (115) of the needle. A coating is disposed on the outer surface of a tubing (116) extending along the axis of the penetration instrument as described in column 3, lines 46 to 49.

Therefore, Lum discloses a tubular electrode having an annular end centered with respect to the longitudinal axis of the instrument. However, Lum does not disclose:

- a means of angular location formed by at least one electrode punctually coinciding with the peripheral surface of the penetration instrument, the coinciding surface of the electrode having a position set off from a longitudinal axis of the instrument, and

- a means for detecting a position of the at least one electrode.

Hence, Lum discloses neither the function nor the claimed specific means of angular location as recited in the Applicants' Claim 19.

The Applicants therefore respectfully submit that not only does Lum fail to disclose the source of voltage supplying the at least two electrodes, Lum also fails to disclose the means of angular location formed by at least one electrode punctually coinciding with the peripheral surface of the penetration instrument, the coinciding surface of the electrode having a position set off from a longitudinal axis of the instrument, and a means for the detecting of the at least one electrode.

The rejection nonetheless turns to Cory to supply a source of voltage supplying the at least two electrodes. Cory also relates to determination of the penetration depth of a needle. However, Cory does not disclose either the function or the means of angular location. Cory teaches measuring the resistance between a coating (106) on the needle and a return electrode (135) located on the skin of the patient. This resistance is said to be significantly higher than the impedance in the tissues so that the measured resistance is approximately that of the coating alone as discussed in column 7, line 58, to column 8, line 18. Therefore, Cory does not disclose means for measuring impedance of the tissues between the electrodes and means of angular location.

What does this mean? This means that even if Cory supplies the missing source of voltage supplying at least two electrodes, Cory still does not cure the deficiencies set forth above

with respect to Lum. In other words, Lum fails to disclose the means of angular location and the means for detecting as recited in Claim 19 and Cory also fails to disclose the claimed means of angular location. This means that even if one skilled in the art were to hypothetically combine Cory with Lum, the resulting device would still not have the Applicants' claimed means of angular location. Withdrawal of the rejection is accordingly respectfully requested.

Claims 19-21, 24-32 and 35 stand rejected under 35 USC §103 over the further hypothetical combination of Beyerlein with Cory and Lum. The Applicants believe that this rejection may be in error to the extent that it identifies specific claims. The Applicants believe that the rejection may be directed to Claims 22-23 and 33-34. In any event, the Applicants respectfully submit that Beyerlein fails to cure the deficiencies set forth above with respect to Cory and Lum. The Applicants therefore believe that the rejection as it is stated to apply to Claims 19-21, 24-32 and 35 is inapplicable and is in any event also inapplicable to Claims 22-23 and 33-34. Withdrawal of the rejection is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire Application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



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